

Galactic & Unidentified sources

Working Group 2



Wiki site

Wiki site for Galactic & Unidentified sources

Bibliography pointing to ADS/astroph papers

Host to relevant proceedings

Book reviews

Image gallery

WG-2 reports

Interactive page

http://www-glast.stanford.edu/cgi-prot/wiki?GalacticUnidSources

Read-only, public page

http://www-glast.stanford.edu/cgi-bin/wiki

FGL*

News

- Variability analysis of EGRET sources (P. Nolan)
 - Population of variable sources in the inner Galaxy
 - Var. estimates based on published fluxes and χ^2 not too reliable
- New Parkes pulsars = possible counterparts to EGRET sources (A. Harding)
- New wavelet detection of sources (R. Terrier+I. Grenier):
 - tested & validated on EGRET data (significance, position, flux)
 - Incorporate the PSF(E) dependance for GLAST in the near future
- TeV electron detection by GLAST and their origin in the local medium (R. Terrier + I. Grenier)
 - Applying cuts for p and e showers at all incident angles => large sensitive area for electron detection (5 10⁵ e/yr at 100 GeV, 2 10³ e/yr at 1 TeV) & good e/p rejection
 - Model of the origin and propagation in the nearby ISM
- Interstellar emission workshop

next year in Paris, to bring IS radiation field and ISM experts



Observation simulator tools

Observing mode

Default = scanning mode
Specific problems to be addressed for pointed mode?

Goal

evaluate the GLAST scientific performance
in tricky, but clear-case situations
a reasonable, but feasible challenge
« quantify » & « prioritize » the list of proposed tests
who does what?

Recommendations

Steady sources should have Poisson noise All photons should be time-tagged



Souce/IS clump

discrimination

Position biases

Pulsar physics

Period folding

binary sources:

period folding &

Extended/ point-

sourceseparation

period search

Sensitivity to

Sensitivity to

spectral variab.

variability

blind period

search

cessary sources

Free parameters

increasing spectral

difference

spectrum

increasing flux difference

clump = pt-source with IS

different spectral indices

CG1 *	Nec
Problem	Tool
Source confusion	3 nearby sources

source

2 interstellar clumps and 1 source

pulsar Itc with sp. variations with

Ms psr with IC peak at 10 TeV

one 100-ms-pulsar lightcurve with a

ephemerides with low-amplitude

extended SNR with a smaller

perion nebula and a pt-source

phase: 1 bright & 1 faint

one ms pulsar lightcurve

Source with known orbital

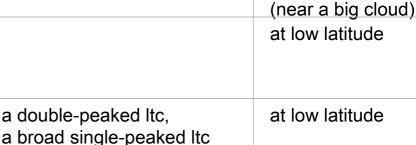
sine-like flux modulation

known ephemeris,

a transient source

a constant source

a transient source



a low amplitude sine-like ltc

LAT orbital period timescale

-1 & -2 sp. index for plerion

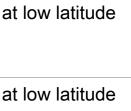
day-timescale

Timescales?

SNR with π^0 bump

month-week-day-hour

timescales, with two df/dt



Location

at low latitude

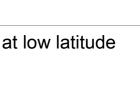
at high latitude

in a complex

on a steep

(Cyg like) region

background slope



at low latitude

at low latitude

at low latitude

at low latitude

at high latitude

at high latitudes